

# Claims

[c1] What is claimed is:

1.A test key layout, comprising:

a first test pattern substantially disposed at a center position of a test key area, wherein said first test pattern consists of a pair of rectangular shaped symmetric patterns having a length L and a width W, and wherein said test key area comprises a reference X-Y coordinate;

a second test pattern arranged in proximity to said first test pattern in 45 degree directions with respect to said first test pattern; and

a third test pattern disposed next to said first test pattern along an X axis of said reference X-Y coordinate; wherein said first test pattern, said second test pattern, and said third test pattern are arranged like a capital "H" within said test key area.

[c2] 2.The test key layout of claim 1 wherein said test key layout is made on a photomask comprising an array of deep-trench (DT) capacitor patterns, and wherein said rectangular shaped symmetric patterns have a dimension that is substantial equal to dimension of said DT capacitor patterns.

- [c3] 3.The test key layout of claim 1 wherein said test key layout is capable of exclusively monitoring 3-foil aberration effect without affected by co-existed COMA aberration effect.
- [c4] 4.The test key layout of claim 1 further comprising a fourth test pattern disposed a distance  $S_1$  from said first test pattern along a Y-axis of said reference X-Y coordinate.
- [c5] 5.The test key layout of claim 4 wherein  $S_1 = 3L$ .
- [c6] 6.The test key layout of claim 1 wherein said second test pattern is disposed a distance  $S_2$  from said third test pattern.
- [c7] 7.The test key layout of claim 6 wherein  $S_2 = L$ .
- [c8] 8.The test key layout of claim 1 wherein said third test pattern is disposed a distance  $S_3$  from said first test pattern.
- [c9] 9.The test key layout of claim 8 wherein  $S_3 = W$ .